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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,467	05/31/2001	Liang Chen	25094A	1738

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EXAMINER
WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
1714	8

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A 8-8

Office Action Summary	Application No.	Applicant(s)	
	09/871,467	CHEN ET AL.	
	Examiner	Art Unit	
	Katarzyna Wyrozebski Lee	1714	

-- The MAILING DATE of this communication app ars on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2,4-10 and 13-20 is/are rejected.

7)☒ Claim(s) 3,11 and 12 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 31 May 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Objections

1. Claim 15 is objected to because of the following informalities: Claim 15 contains limitation of process for manufacturing a fiber glass insulation product, which comprises the step of applying binder composition of claim 14 onto the fiber glass. Claim 14 is a product claim and not composition; therefore claim 15 is not properly dependent. In addition, if claim 15 will be amended to depend on claim 1, then claims 18-20 will become redundant. Appropriate correction is required.

Claims Analysis

Present claims 1-20 are understood as claims calling for binder system, where the binder comprises polycarboxy polymer, polyhydroxy crosslinking agent and surfactant. The binder is intended for glass fiber insulation, however, the presence of glass fibers is not required by the present claims.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4-8, 13, 14 are rejected under 35 U.S.C. 102(a) as being anticipated by Reck (US 6,099,773).

The prior art of Reck discloses composition for a binder system utilized with fibers, which comprises polymer, crosslinking agent and surfactant.

According to the examples the polymer utilized in the prior art of Reck (col. 10) includes polyacrylic acid, as well as its copolymer with maleic acid. The crosslinking according to the same examples is triethanol amine. Crosslinking agents are utilized in an amount of 10 ppm to 5% by weight (col. 6, line 7).

According to the specification of the prior art of Reck, one of ordinary skill in the art is also enabled to utilize emulsifiers such as ethylene oxide/propylene oxide copolymers (col. 6, line 20), which is also well known surfactant. Other emulsifiers, which can also be utilized are surfactants include alkyl phenol ethoxylates, fatty acids ethoxylates, sulfur containing alkyl phenols. Such compounds can be utilized in an amount of 0.05-20 wt %.

The prior art of Reck forms aqueous composition, having solids content of 44.5 and 50 % (see examples, col. 10).

The process involves steps of applying binder composition to fibers by spraying and curing it (col. 9, lines 30-55). Sprayed fibers care then pressed at a temperature of 100-250°C for 15 sec-30 min. to give stable product.

In the light of the above disclosure, the prior art of Reck anticipates requirements of claims rejected above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Arkens (US 5,763,524)

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is showing that polycarboxy/polyhydroxy binder system can also be utilized with glass fiber to produce insulation and also utilizing the same process steps.

With respect to the above differences, the prior art of Arkens discloses binder composition, which is applied to the glass fibers.

The composition comprises polyacid and polyol curing agent with phosphorus accelerator. Polyacid utilized in the examples is also polyacrylic acid and polyhydroxy compound utilized in the examples include glycerol, bis-hydroxyadipamide (col. 9 ex. 1 and col. 11, ex. 5). The specification of the prior art of Arkens also enables one of ordinary skill in the art to utilize curing agents such as triethanol amine (col. 7, line 1).

The additives in the prior art of Arkens include emulsifiers and organosilanes (col. 6, lines 52-57).

According to example 4, the binder composition is applied glass fiber substrate and tested (col. 10). The specification (col. 8, lines 37-50) teaches further steps. After the binder composition has been applied to the glass fiber, the entire article is heated and cured at a temperature of 120-400°C. The method of application of the binder to the fiber glass includes spraying, padding, saturating, roll coating, curtain coating, beater deposition and coagulation.

The heat resistant non-wovens formed in the prior art of Arkens can be utilized in insulation bats of rolls (col. 8, lines 61-64).

In order for the composition to be useful as heat insulation, the fiber utilized have to withstand high temperatures. The prior art of Arkens discloses that such temperature has to be above 125°C.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize binder of Reck in the disclosure of Arkens and thereby obtain claimed invention. Both prior art disclosures teach binder system containing polyacid and poly-hydroxyl compound that is capable of binding various types of fibers. Utilizing such binder with glass fibers would result in article, capable of withstanding much higher temperatures.

8. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Reck (US 6,348,530).

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck'773 is limitation of glass fiber, and wherein the process of applying the binder to glass fibers can be the same as in Reck'773.

With respect to the above differences the prior art of Reck'530 discloses binder composition comprising polyacid and polyhydroxylated amine, which is applied to the fibers.

Example 9 of Reck'530 discloses composition comprising polyacrylic acid, ethoxylated oleylmonoamide in water (col. 8).

Fibers that can be utilized in the prior art of Reck'530 include glass fibers (col. 24, lines 49-60) as well as hemp, animal fibers, cotton or polymer fibers.

According to claim 22 of Reck'530, resulting composition can be utilized as insulating material with an additive such as dust suppressant, coupling agents such as alkoxysilanes, lubricants, emulsifiers and wetting agents (col. 21, lines 31-49).

Fibers such as glass fibers, when utilized with the binders of Reck, would form an article having high strength in the dry and wet states and can be utilized in areas such as roofing, insulation, for which other natural fibers would not be utilized.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize glass fibers of Reck'530 with the binder of Reck'773 and thereby obtain the claimed invention. The above combination would form article having high strength in the dry and wet states and can be utilized in areas such as roofing, insulation.

9. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree, which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

10. Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Arkens (US 5,763,524) as applied to claims 1, 2, 4-8, 13-20 above, and further in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree, which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck and Arkens and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

11. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reck (US 6,099,773) in view of Reck (US 6,348,530) as applied to claims1, 2, 4-8, 13-20 above, and further in view of Schell (US 5,646,207).

The discussion of the disclosure of the prior art of Reck from paragraph 3 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Reck is recitation of hydrolyzed silane coupling agent.

With respect to the above differences, the prior art of Schell discloses polycarboxy polymer utilized with glass fibers, wherein the glass fibers are pretreated with silane coupling agent (col. 7, lines 1-64). The coupling agents of Schell can be hydrolyzed to a desired degree, which also encompasses complete hydrolyzation. The amount of the coupling agent is 2-20 parts by weight.

Coupling agents, as the name suggests it, couple fibers to the binder. Or in other words increase the adhesion between fibers and a binder in a composition.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the coupling agent of Schell in the composition of Reck'773 and Reck'530 and thereby obtain the claimed invention. Coupling agents, would increase the adhesion between the fiber and binder in the prior art of Reck.

Allowable Subject Matter

12. Claims 3, 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record found during the search did not contain recitation of ethoxylated 2,4,7,9-tetramethyl-5-decyn-4,7-diol surfactant as well as recitation of mineral oil dust suppressant.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taylor et al (US 2002/0091185).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Katarzyna Wyrozebski

KIWL
March 4, 2003